In The Specification

Applicant presents replacement paragraphs below with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please replace paragraph 2 on page 10, lines 16-25 with the amended paragraph as follows:

In the embodiment of Fig. 1, each Y axis assembly 30 may be supported by posts 44 that are ultimately supported by machine stand 28. Typically, although not necessarily, table support structure 29 is provided with a vibration isolation system (not shown) such as in machine stand 28, and conventional leveling devices for maintenance of accuracy. Each Y axis assembly 30 includes guideways, such as rails 92 or the like (Fig. 8) along which bearing slides 112, 118 (Fig. 6) on which bridge 32 travels. Bearing slides 112, 118 may be roller bearings or air bearings or other conventional bearing systems. Each Y axis assembly 30 also includes conventional scales 96 (Fig. 8) and a drive mechanism 94 (Fig. 8), for moving bridge 32 back and forth along its associated rails in the Y direction.

Please replace paragraph 1, which begins on page 16, line 9 through page 17, line 6 with the amended paragraph as follows:

As with beam 80, such bending due to differential expansion of ram 38 and rail 86 may be minimized by the provision of a member such as bar 88. Like bar 70, bar 88 balances the thermal stress produced in ram 38 by the differential expansion of ram 38 and rail 86. Bar 88 is subject to the same considerations as bars 70 and the selection of the proper materials, size and location of bar 88 results from consideration of the distance from the neutral axis 89, the cross-sectional area, the stiffness and the coefficient of thermal expansion of bar 88. For the Z ram 38, the neutral axis 89 typically extends in the Z direction or parallel to its length through about the geometric center of ram 38. In one embodiment, where ram 38 has a generally square or rectangular cross-sectional shape, bar 88 is disposed on an outer surface of Z ram 38 directly opposite the outer surface of ram 38 on which rail 86 is disposed and bar 88 extends generally parallel to and is generally coextensive with rail 86 in the Z direction. Since ram 38 is typically

generally symmetrically disposed about its neutral axis 89, this configuration positions bar 88 about the same distance from the neutral axis 89 of Z ram 38 as rail 86 on the opposite side of ram 38 from rail 86. Also, typically, but not necessarily, bar 88 is formed of the same material as rail 86, and/or has the same coefficient of thermal expansion as rail 86. Also, typically, bar 88 has the same cross-sectional dimension as rail 86, so that bar 88 expands at substantially the same rate and in the same direction as rail 86. As with bars 70, bar 88 may have a coefficient of thermal expansion, stiffness, spacing from the neutral axis 89 and a size and shape different from that of rail 86, so long as the net effect of bar 88 is to balance the thermal stresses produced by the differential expansion of ram 38 and rail 86. Also, multiple bars 88 may be used. It has been observed that by the provision of bar 88 of this invention, the bending of ram 38 is substantially reduced to zero for a temperature change of from 20°C to 30°C. Like bars 70, bar 88 typically is firmly attached to Z ram 38, such as by the use of an epoxy or by screws ~~89~~ 85, or both. Also, bar 88 need not be the same length as rail 86, but could be shorter or longer. Moreover, bar 88 need not be positioned exactly opposite rail 86 on ram 38, but could be offset in the X direction on ram 38 with respect to rail 86.

Please replace paragraph 2 on page 17, lines 14-31 with the amended paragraph as follows:

The Y axis assembly 30 may include a Y rail 92 mounted on a Y-rail bed 91 which in turn rests on a support 98. It is to be understood that each Y axis assembly 30 is substantially identical for purposes of this invention. Y rail 92 is, in most significant respects, substantially identical to rails 50, and is typically formed of a material that is not subject to excessive deformation or change in size due to changes in humidity and temperature. Like rails 50, one suitable material for rail 92 is steel, and in particular a high carbon steel. Like rails 50, rail 92 typically is formed of a material which is different from that forming support 98, and typically has a coefficient of thermal expansion which is less than that of support 98. Support 98 may be a casting or the like, and may be formed of the same material as beam 80. Support 98 may be formed of other suitable materials, so long as such materials are sufficiently strong to support beam 80 and its associated carriage 36. As noted previously, typically Y axis assembly 30 also includes known scales 96 for measuring the position of beam 80 along Y axis assembly 30, and a

known suitable drive, such as drive rack 94 which may be engaged by a suitable drive mechanism ~~(not shown)~~ on beam 80 such as a pinion gear driven by a motor 170 (Fig. 2) or the like ~~(not shown)~~. Rack 94 and scales 96 are conventional are not part of this invention, and therefore will not be further described.